Sterling – trading the intraday stop go

By Andy Webb

Jekyll and Hyde

Sterling currently exhibits something of a split personality. On the one hand, daily price charts of Sterling versus most popular currencies show a marked tendency to trending – a characteristic that in many cases appears to coincide (approximately) with the introduction of the euro. On the other, Sterling's intraday behaviour is far less tractable, with a tendency to do virtually nothing for extensive periods and then abruptly take off in a violent directional move.

To some extent, this behaviour is driven by the way many traders' risk profiles and time horizons have changed over the past four or five years. While traders might previously have been happy to take and hold positions in Sterling for a month or more, this is now far less common. This is partly due to a lower tolerance of volatile returns, and one way to address this is to spend less time in the market. As a result, many traders now prefer to 'grab it and run' in order to minimise their exposure.

Ironically, this only serves to exaggerate Sterling's little intraday foibles, as an increasing number of traders hover over their keyboards awaiting some form of intraday breakout. If a significant piece of news or a substantial flow appears, there is a frantic scramble to climb aboard the move and benefit from what may be the only P & L opportunity of the trading session. ▶

Method or emotion?

However, scrambling after the herd doesn't guarantee that the initial move out of the congestion area won't prove to be a false breakout that then develops into another sideways trading range. Some means of objectively quantifying the market's

degree of congestion – and therefore the likelihood of any breakout following through into a substantive move – is obviously desirable.

One possible solution is the congestion count, which counts the number of consecutive bars with price ranges that overlap that of the current bar. In Figure 1 the two red horizontal lines mark

the high and low of the current bar – any consecutive preceding bars that intersect with these lines will be included in the congestion count. The first, fifth and 10th bars included in the current congestion count of 10 have been marked (the congestion count always includes the current bar). ▶
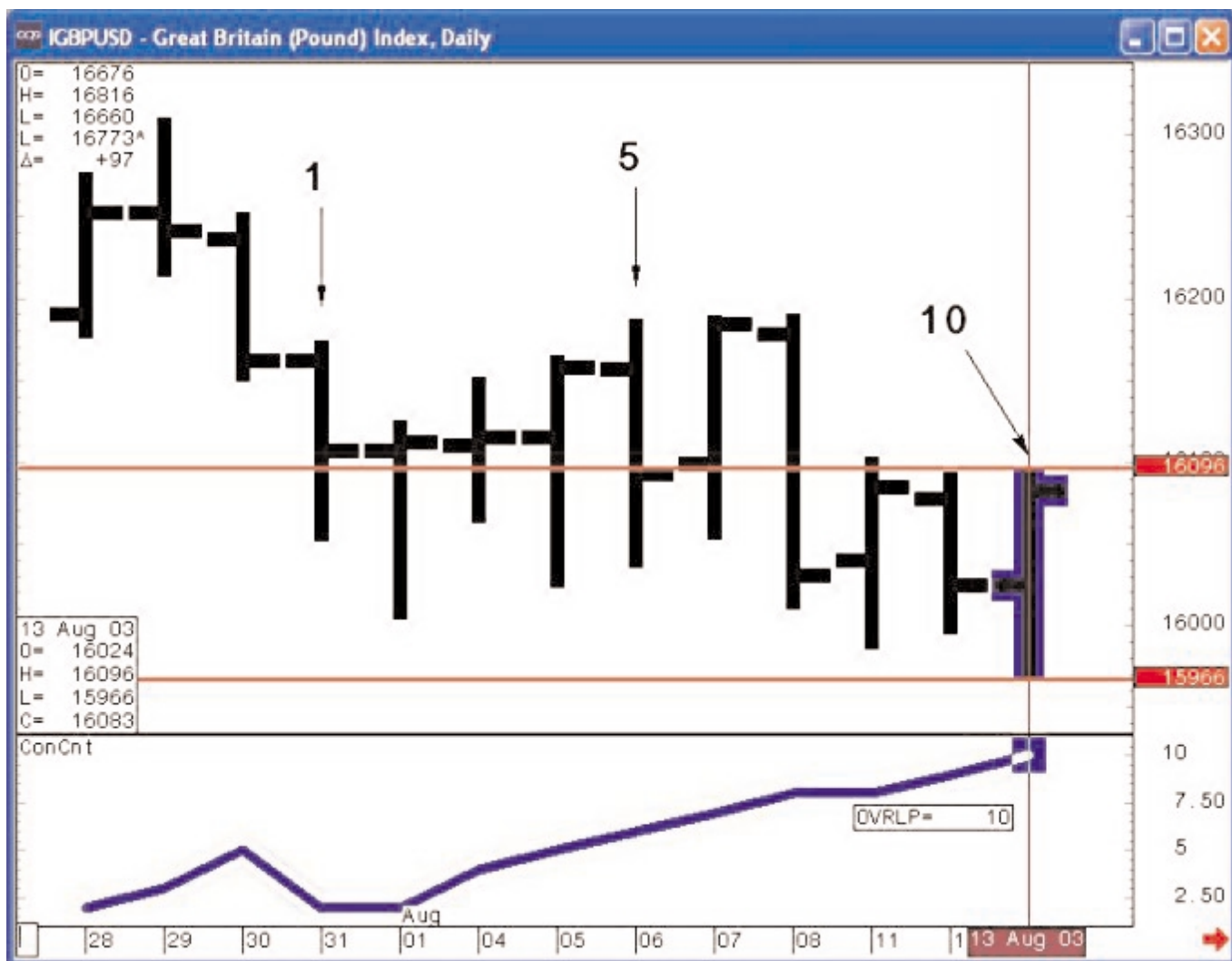
Figure 1

There are, in fact, two versions of the congestion count: the basic 'last' version (see Figure 2 bottom chart pane), which only requires that the consecutive preceding bars overlap the current bar, and the 'group' version, which requires that these bars must also overlap each other in order to be included in the count. The basic premise is that high congestion count values often precede major breakouts. This certainly proves to be the case in Figure 2, where a 'last' congestion count reading of 26 on a 60 minute Cable chart (highlighted by the vertical cursor) is followed by a 70 tick rally. (To give an indication of the relative importance of a congestion count reading of 26, the green line overlaid on the congestion count is its long term (1000 bar) moving average, which shows a reading of only 6.78). ▶
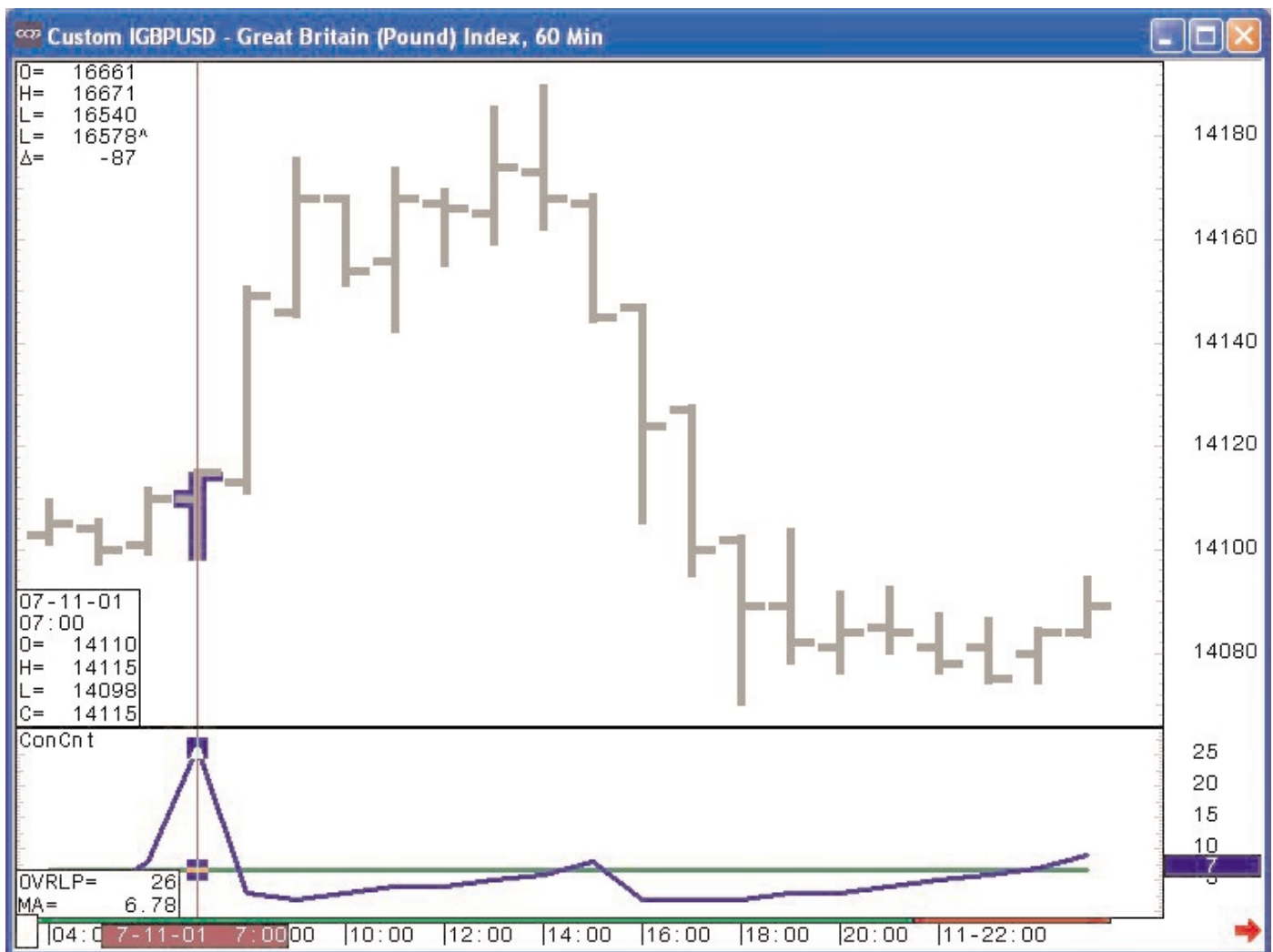

Figure 2

False premise

However, one carefully selected chart on its own proves nothing – taken in isolation a high congestion count only indicates that *x* number of bars are overlapping. It is perfectly possible to achieve a high congestion count (particularly with the 'last' version of the indicator) simply because the last bar in a group has a wide range. For example, the 60 minute EURGBP chart in Figure 3 shows the 'last' version of the congestion count suddenly spiking to a value of 23 for just this reason. It therefore has little value as a trading signal, for, by the time the congestion count value is calculated (on the close of the bar), the party is already over. ▶
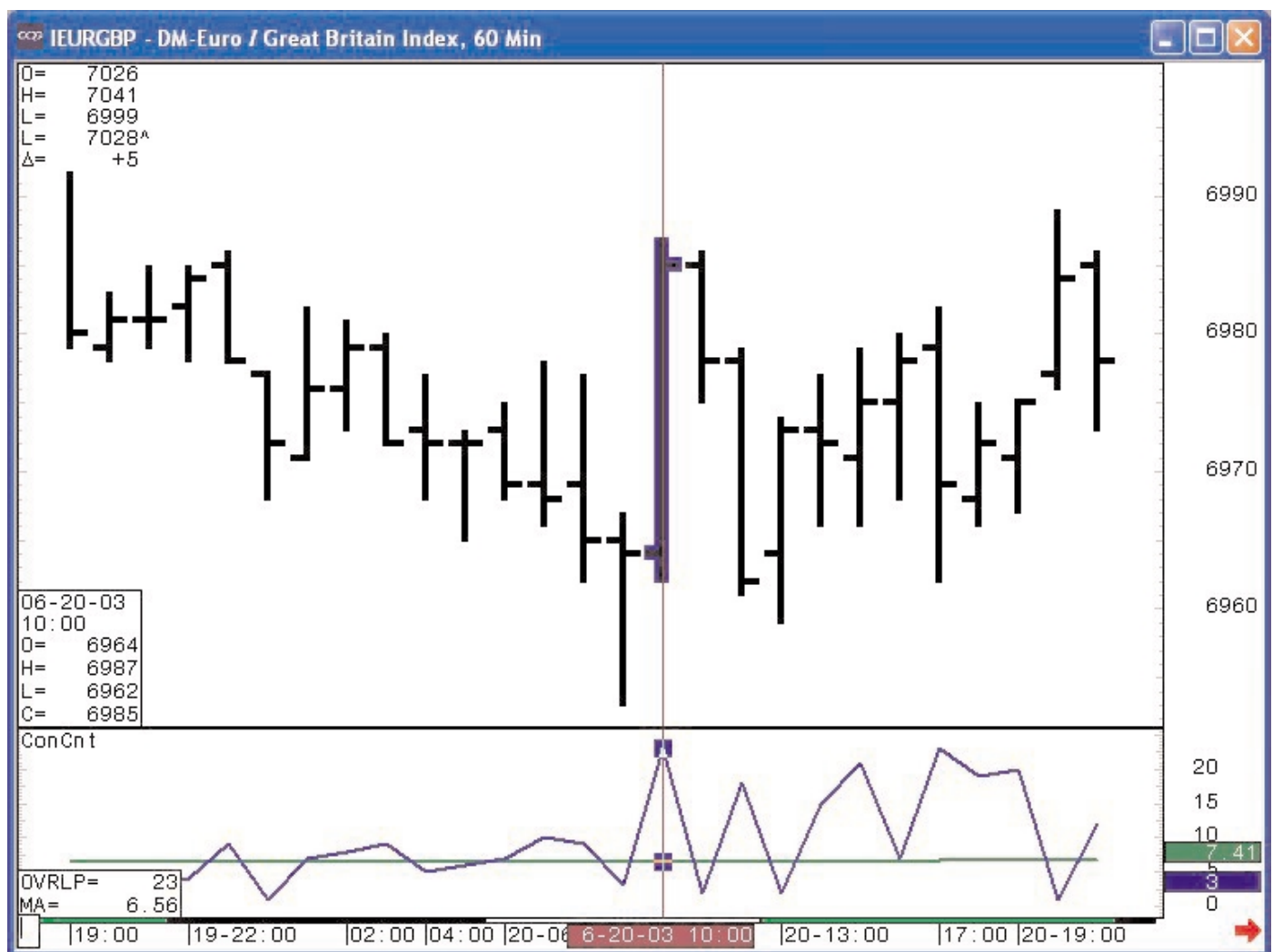

Figure 3

The 'group' version of congestion count goes some way towards addressing this issue. Figure 4 shows the same data as Figure 3, but with the 'group' version of the indicator. The requirement that preceding bars must overlap each other (as well as the current one) in order to be included in the count results in a reading of only 4, confirming that there was in fact no appreciable build up of congestion. ('Group' congestion count values are typically lower than those for the 'last' type congestion count – for example, a 'group' congestion count reading above 15 in Cable would be considered exceptional.)
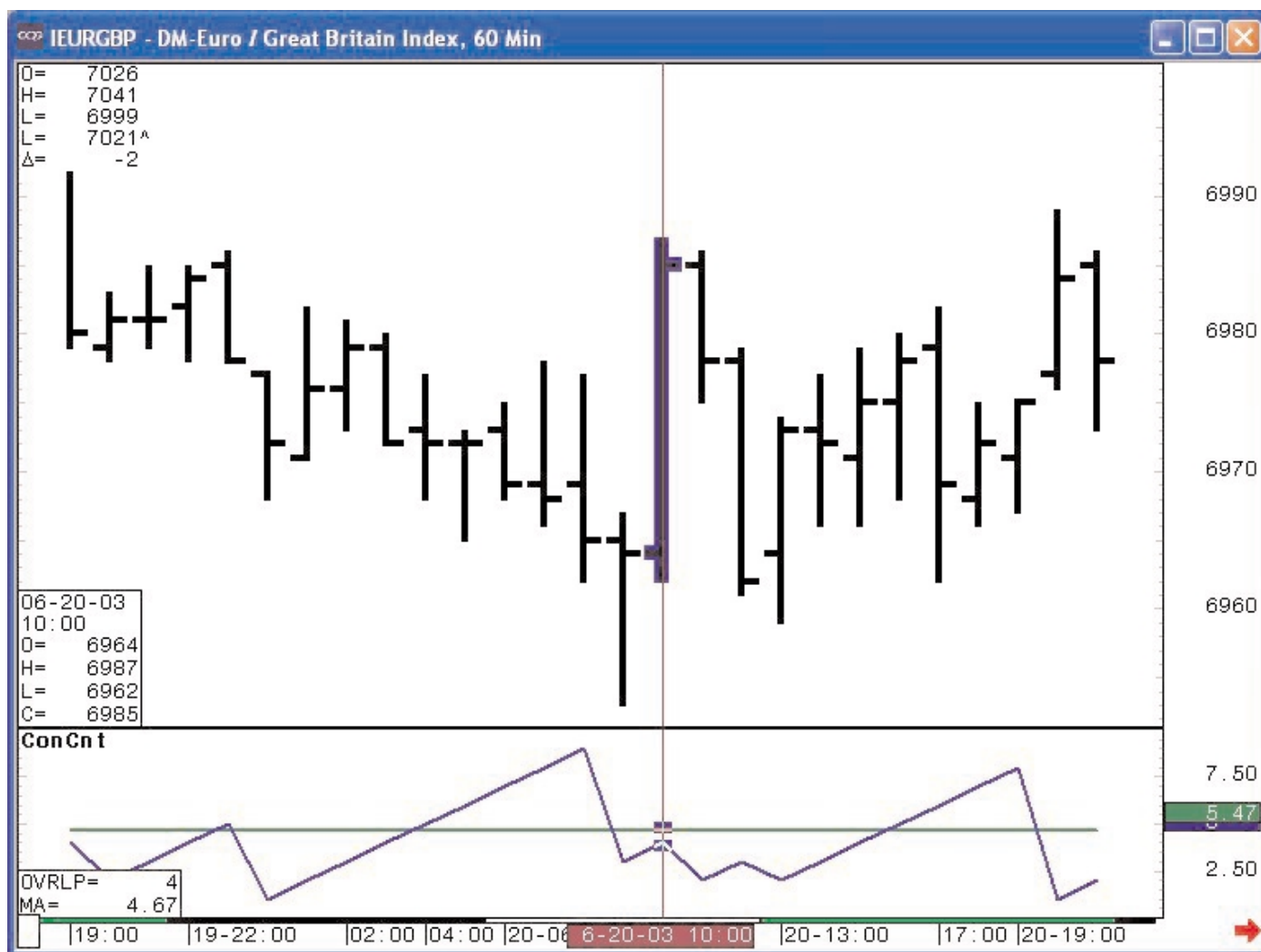

Figure 4

Defining the range – 1

One way of ensuring that a high congestion count is not simply flagging a price bar with a high range is to filter possible entry signals by specifying the acceptable size of the average true range [1] of either a single bar or series of bars.

Figure 5 shows a pair of short entry signals on Cable. The rules for these signals are:

1 The 'last' congestion count reading of the preceding bar must be 20 or greater

2 The 21 period average true range be less than 100 period average true range

3 The current bar crosses below the low of the preceding bar minus 0.05% of the close of the preceding bar (the actual trade entry price is shown by the red horizontal dash overlaid on the entry bar.) ▶
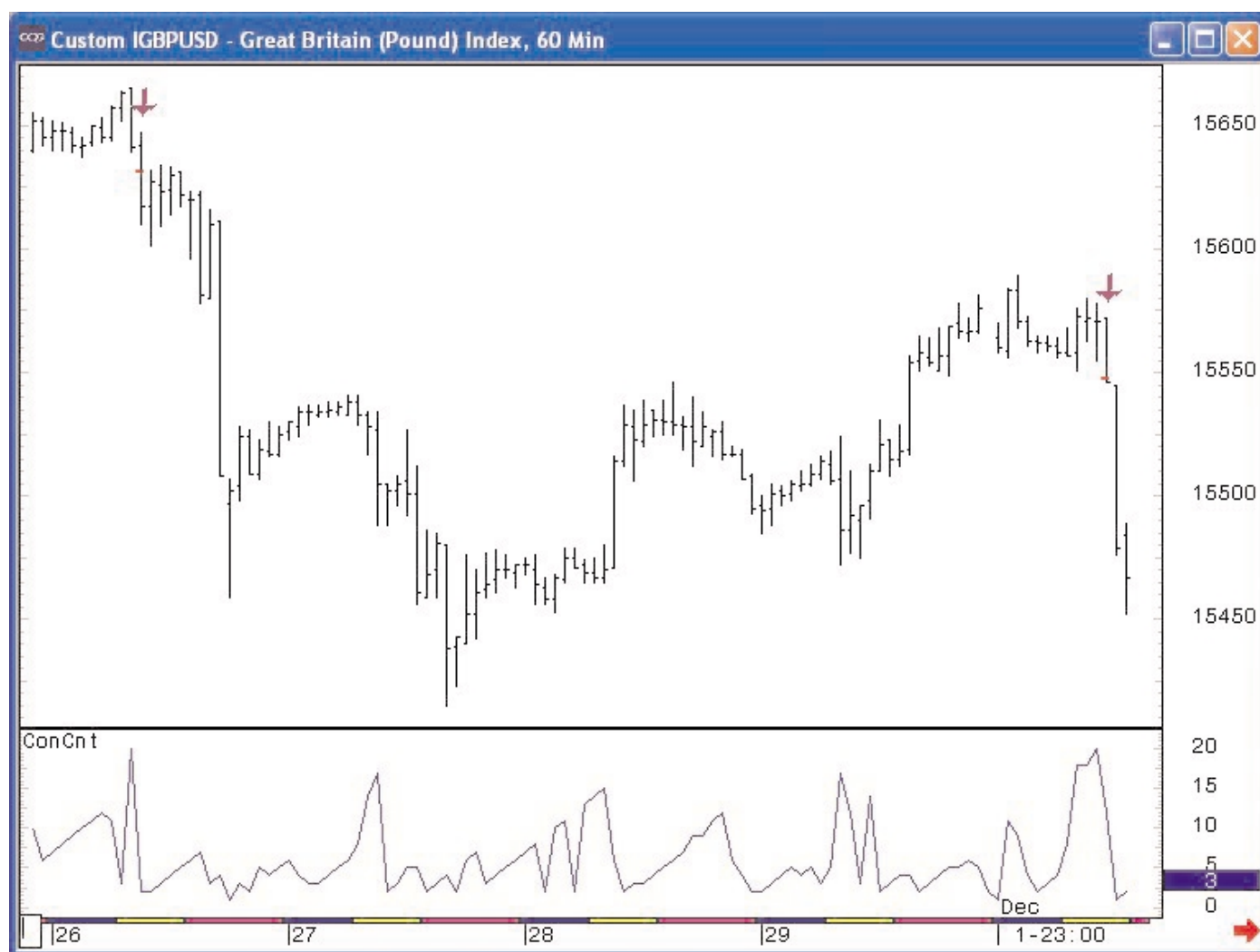

Figure 5

Although these are obviously two rather idealised examples, the bigger picture is also in positive territory, albeit by not a great deal. Figure 6 is the output table from an evaluation of the short entry signal outlined above, together with its long entry counterpart. (Rules 1 and 2 for the long entry are the same as for the short signal, and rule 3 is the reverse of rule 3 for the short entry – ie. that the current bar crosses above the high of the preceding bar plus 0.05% of the

close of the preceding bar.) The entry signals have been tested on a portfolio of currency pairs (EURGBP, GBPCHF, GBPAUD, GBPCAD and GBPUSD) from 15 June 2002 to 20 June 2003 using 60 minute price bars.

The top row of the table shows the total gain in percentage terms (percentages are based upon the entry price of each trade [2]) at the close of each bar out as far as six bars after entry. (For bars one to three,

performance as at the open of each bar is also shown.) It is important to note that these are not complete trade system results, but only an assessment of the quality of the long and short entry signals, and how trades triggered by those signals would perform over the bars following entry. The lower two thirds of the display show the first few of the 259 individual trade entries that are included in the summary statistics. ►

	0 Bars	Open 1 Bar	1 Bar	Open 2 Bar	2 Bars	Open 3 Bar	3 Bars	4 Bars	5 Bars	6 Bars
Sum of 259	1.58	1.43	0.39	0.20	2.04	1.40	0.84	5.11	5.21	4.85
Average of 259	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.02	0.02	0.02
Average for Wins	0.09	0.09	0.12	0.12	0.15	0.15	0.17	0.19	0.22	0.25
Average for Losses	-0.07	-0.07	-0.12	-0.12	-0.15	-0.15	-0.16	-0.19	-0.21	-0.22
Draw Down	-1.66	-1.71	-3.12	-3.04	-3.15	-3.41	-3.76	-4.36	-4.40	-7.08
Consecutive Losses	7	7	8	8	12	12	8	8	8	9
Wins & Losses	129/130	125/134	128/131	127/132	135/124	133/126	127/132	143/116	137/120	134/125
Accuracy %	49.81	48.26	49.42	49.03	52.12	51.35	49.03	55.21	53.31	51.74
All Profits/All Losses	1.17	1.15	1.03	1.01	1.11	1.08	1.04	1.23	1.21	1.17
Avg Win/Avg Loss	1.18	1.23	1.05	1.05	1.02	1.02	1.08	1.00	1.06	1.09
% Remove to Neutral	1.54	1.54	0.39	0.39	1.54	1.16	0.77	3.09	2.72	1.93
Avg DD Perf Ratio	1.70	1.49	0.18	0.09	0.98	0.58	0.33	2.27	2.13	1.20
Max DD Perf Ratio	0.94	0.83	0.12	0.07	0.64	0.41	0.22	1.16	1.17	0.68
.IGBPUSD 06/17/2002 (	-0.01	0.00	-0.07	-0.07	-0.08	-0.08	-0.16	-0.14	-0.02	-0.04
.IGBPCAD 06/18/2002 (	-0.04	-0.05	-0.01	-0.02	-0.06	-0.06	-0.09	-0.12	-0.12	-0.16
.IGBPCAD 06/18/2002 (	-0.05	-0.05	-0.12	-0.13	0.02	0.07	0.26	0.22	0.54	0.64
.IGBPCAD 06/20/2002 (	-0.12	-0.12	-0.23	-0.23	-0.13	-0.14	-0.15	-0.05	-0.16	-0.13
.IGBPCAD 06/28/2002 (	0.08	0.11	-0.08	-0.10	-0.30	-0.30	-0.03	0.17	0.08	0.05
.IGBPAUD 07/02/2002 (	-0.08	-0.05	0.12	0.09	0.39	0.43	0.21	0.23	0.13	0.06
.IGBPCAD 07/02/2002 (	-0.03	-0.03	-0.09	-0.12	0.10	0.11	-0.38	-0.44	-0.70	-0.68
.IGBPAUD 07/02/2002 (	0.05	0.02	0.33	0.37	0.15	0.13	0.17	0.07	0.00	-0.13
.IGBPCAD 07/02/2002 (	0.01	-0.01	0.27	0.23	0.25	0.23	0.19	0.27	0.25	0.15
.IGBPAUD 07/02/2002 '	-0.18	-0.16	-0.25	-0.23	-0.28	-0.28	-0.32	-0.20	-0.24	-0.17
.IGBPAUD 07/04/2002 :	0.03	0.04	0.22	0.20	0.21	0.19	0.25	0.14	0.21	0.25
.IGBPAUD 07/04/2002 :	0.14	0.12	0.13	0.11	0.17	0.17	0.06	0.13	0.17	0.24
.IEURGBP 07/05/2002 (	-0.13	-0.13	-0.03	-0.05	0.15	0.14	0.12	0.20	0.23	0.25
.IGBPCHF 07/05/2002 (	0.01	-0.01	0.16	0.16	0.12	0.10	0.20	0.24	0.29	0.31
.IEURGBP 07/05/2002 (	0.09	0.07	0.06	0.06	0.14	0.14	0.17	0.18	0.17	0.14
.IGBPCHF 07/05/2002 (	0.08	0.07	0.04	0.01	0.11	0.10	0.16	0.20	0.23	0.21
.IEURGBP 07/09/2002 '	0.01	0.01	0.09	0.09	0.11	0.09	0.07	0.04	0.03	-0.11
.IGBPCHF 07/09/2002 1	0.10	0.10	0.17	0.17	0.16	0.16	0.13	0.15	0.12	0.04
.IGBPCHF 07/10/2002 1	-0.01	-0.02	-0.16	-0.15	-0.13	-0.15	-0.11	-0.08	-0.05	-0.12
.IGBPCHF 07/11/2002 (	0.01	0.03	0.12	0.11	0.10	0.10	-0.01	-0.05	0.00	-0.20
.IEURGBP 07/11/2002 (	-0.08	-0.10	-0.02	-0.02	0.03	0.03	-0.03	0.15	-0.05	-0.05
.IGBPAUD 07/15/2002 (	0.20	0.13	0.36	0.38	0.44	0.47	0.72	0.70	1.00	1.16
.IGBPAUD 07/19/2002 (	-0.07	-0.07	0.02	0.00	-0.14	-0.16	-0.27	-0.02	-0.27	-0.23

Figure 6

Figure 7 shows the relative contribution of the various currency pairs to the overall results. Again, the picture is reasonably encouraging with only one pair (EURGBP) showing a loss over the test period.
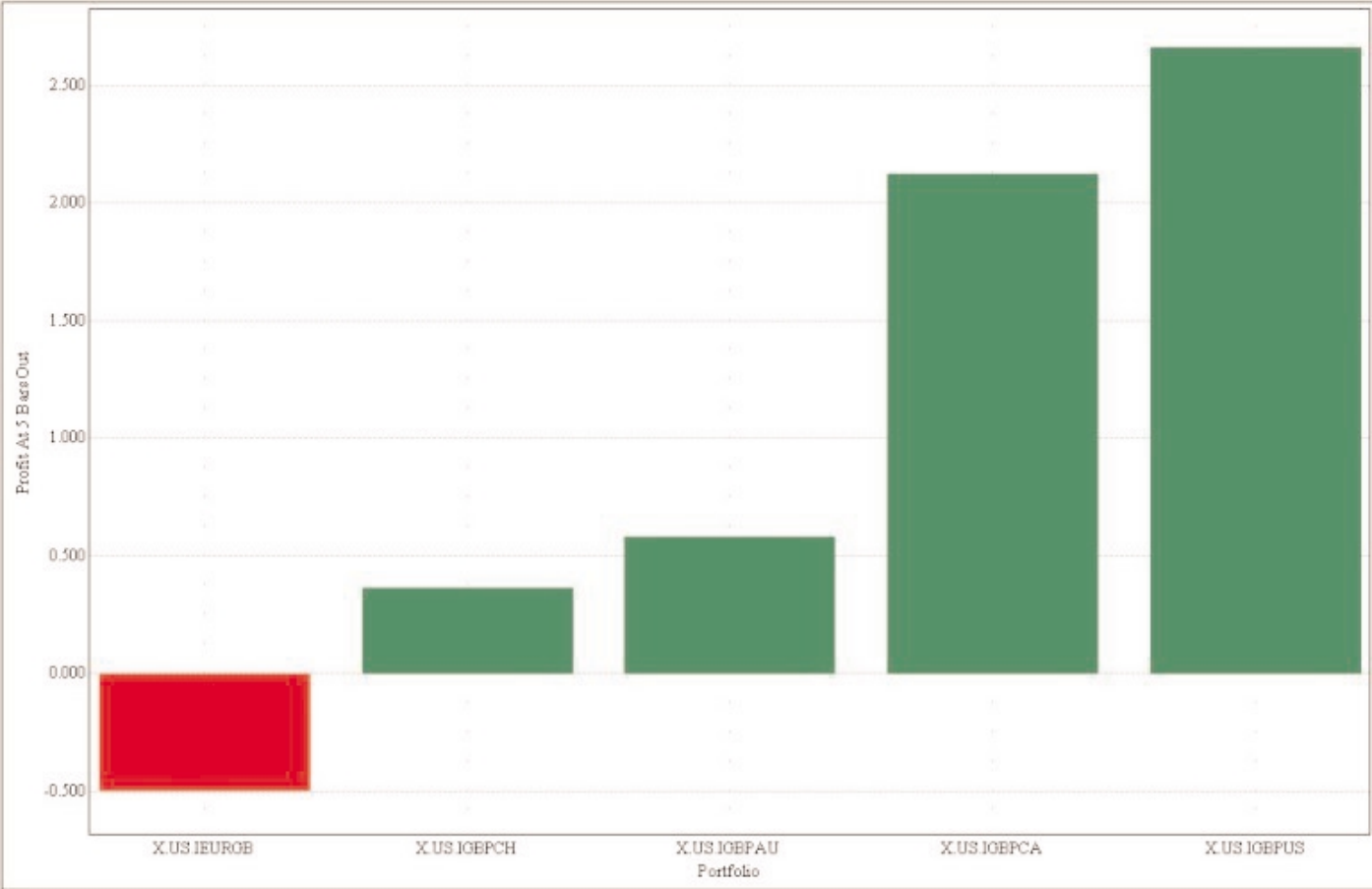

Figure 7

Defining the range – 2

Though the basic signals have delivered positive results (which were confirmed by the three preceding years back as far as the introduction of the euro) there is still plenty of scope for improvement. For example, the low average result per trade (row two of the table) is unlikely to cover much more than slippage and the bid/offer spread in a live trading situation. One of the issues here is ensuring that the trading range of the congestion period is tight enough to give any breakout sufficient impetus. (A commonly accepted characteristic of successful breakouts is that they are preceded by narrow, congested trading ranges.)

While requiring the short term average true range to be less than the long term average true range (as in the previous example) goes some way towards addressing this, a better alternative might be to use the congestion count itself as an input for precisely defining the range of the congestion period. For example, in Figure 8 the vertical cursor highlights a congestion count ('group version') value of 13, which has been used as the look back period for the maximum/minimum values on the chart (the maroon and blue/green lines bounding the price bars). The next step would be to compare the size of the range of the congestion immediately prior to the breakout with the size of previous ranges that have the same congestion count. ▶
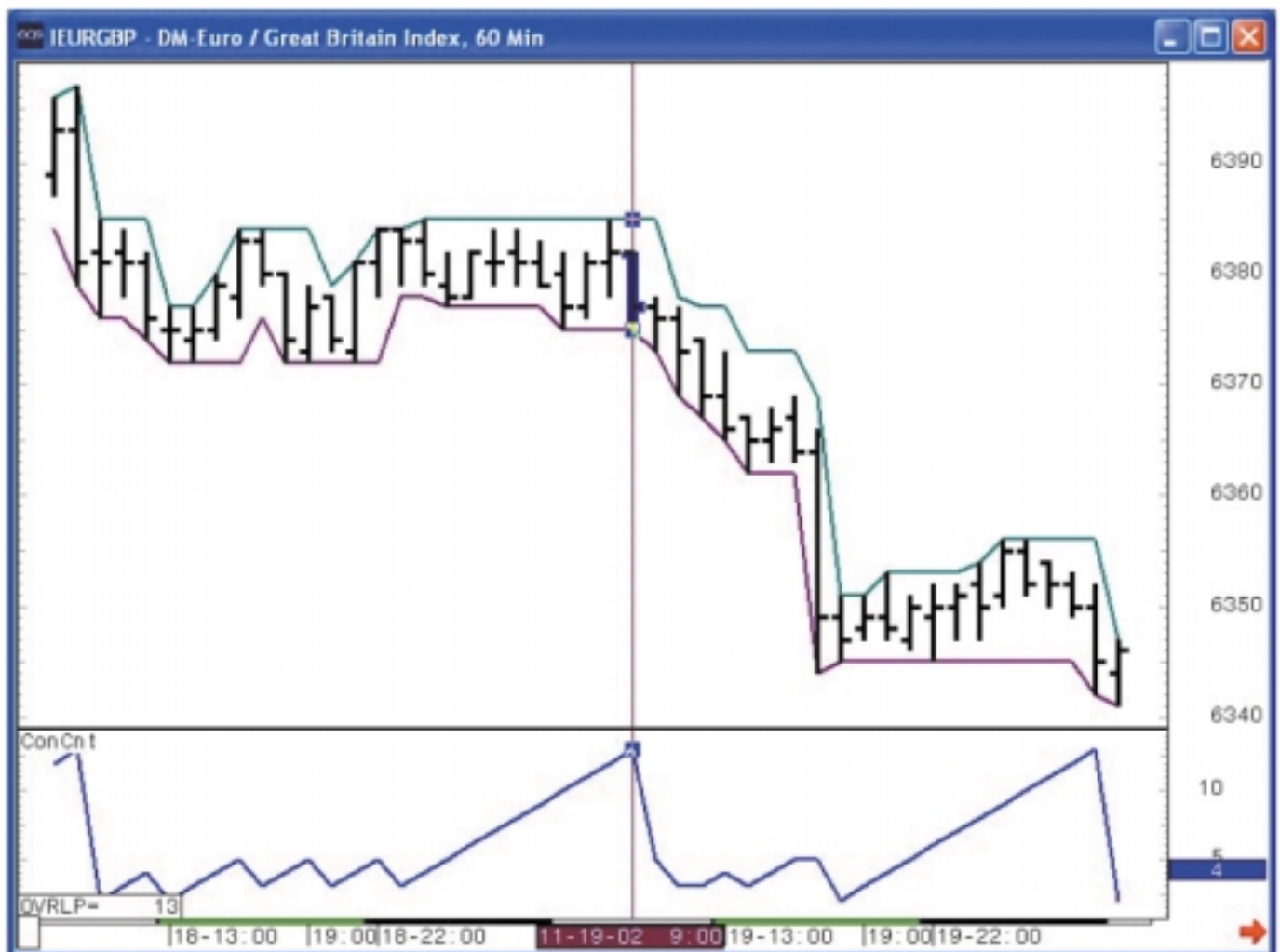

Figure 8

Figures 9 and 10 show the trade signal evaluation results for such a rule set based on the same data as the first set of entry signals. The additional requirement is that the size of the trading range on the bar prior to entry has to be smaller than the long-term average of all ranges with the same congestion count value. As can be seen, the trade count has dropped by more than 50%, but there has also been a dramatic improvement in profitability – for example, the average performance of all entries after 10 bars is +0.16%, which for GBPUSD would equate to approximately 27 pips at current levels. At first glance this may not seem particularly scintillating, but it should be borne in mind that these results are just for raw entry signals – eg. there are no stop losses to weed out poor entry signals along the way. Figure 10 also reveals that although GBPCAD was by some way the strongest performer, the other four currency pairs also made solid contributions. ▶

|	0 Bars	1 Bar	2 Bars	3 Bars	4 Bars	5 Bars	6 Bars	7 Bars	8 Bars	9 Bars	10 Bars
Sum of 115	8.39	8.72	10.53	12.39	16.40	16.37	16.83	16.68	15.79	18.43	18.26
Average of 115	0.07	0.08	0.09	0.11	0.14	0.14	0.15	0.15	0.14	0.16	0.16
Average for Wins	0.14	0.21	0.22	0.25	0.29	0.31	0.35	0.36	0.39	0.37	0.41
Average for Losses	-0.09	-0.12	-0.13	-0.15	-0.17	-0.18	-0.20	-0.22	-0.22	-0.24	-0.23
Draw Down	-0.28	-1.17	-0.80	-1.34	-1.28	-1.03	-1.43	-1.40	-1.52	-1.27	-1.72
Consecutive Losses	3	6	4	4	3	4	3	4	4	4	5
Wins & Losses	78/37	69/46	74/41	75/40	78/37	75/40	73/42	72/43	67/48	75/40	69/46
Accuracy %	67.83	60.00	64.35	65.22	67.83	65.22	63.48	62.61	58.26	65.22	60.00
All Profits/All Losses	3.96	2.58	2.94	3.00	3.54	3.33	2.96	2.79	2.52	2.92	2.76
Avg Win/Avg Loss	1.88	1.72	1.63	1.60	1.68	1.78	1.70	1.67	1.81	1.56	1.84
% Remove to Neutral	22.61	15.65	21.74	25.22	28.70	26.09	22.61	20.87	18.26	21.74	20.87
Avg DD Perf Ratio	73.49	21.89	36.05	34.60	53.36	56.34	35.33	32.15	27.02	38.92	34.33
Max DD Perf Ratio	29.62	7.36	13.00	9.14	12.62	15.70	11.63	11.78	10.28	14.36	10.48
US.IGBPCAD 07/02/2002 03:C	0.08	0.15	0.40	0.38	0.32	0.40	0.38	0.28	0.40	0.48	0.49
US.IGBPAUD 07/02/2002 09:C	0.12	-0.01	-0.08	-0.11	-0.15	-0.03	-0.07	0.00	-0.13	-0.29	-0.37
US.IEURGBP 07/09/2002 06:C	-0.07	-0.06	-0.06	-0.12	-0.01	-0.10	-0.06	-0.10	-0.12	-0.18	-0.20
US.IGBPAUD 07/15/2002 05:C	-0.07	0.26	0.43	0.51	0.79	0.76	1.07	1.22	1.32	1.16	1.04
US.IGBPAUD 07/19/2002 01:C	-0.06	-0.22	-0.32	-0.15	-0.03	-0.28	-0.02	-0.07	-0.10	-0.15	-0.16
US.IGBPCAD 07/24/2002 01:C	0.24	-0.09	-0.08	-0.17	-0.28	-0.53	-1.28	-1.05	-0.65	-0.35	-0.39
US.IGBPCAD 07/26/2002 14:C	0.06	-0.15	-0.17	-0.14	-0.19	-0.01	-0.13	-0.02	-0.13	-0.13	-0.12
US.IGBPAUD 08/01/2002 09:C	0.26	0.33	0.12	0.18	0.18	0.22	0.35	0.45	0.61	0.51	0.52
US.IGBPCAD 08/13/2002 07:C	-0.03	0.12	0.18	0.38	0.44	0.41	0.35	0.14	0.08	-0.07	-0.06
US.IGBPCAD 08/20/2002 05:C	-0.01	0.05	-0.02	-0.17	-0.18	-0.09	0.09	-0.03	0.11	0.03	0.02
US.IGBPUSD 09/06/2002 07:C	0.00	0.25	0.28	0.27	0.41	0.34	0.43	0.36	0.31	0.35	0.39
US.IGBPCAD 09/09/2002 21:C	0.06	0.01	0.13	0.10	0.01	-0.29	-0.03	-0.20	-0.08	0.13	0.21
US.IGBPUSD 09/10/2002 02:C	0.15	0.12	0.18	0.27	0.22	0.21	0.18	0.22	0.18	0.22	0.18
US.IEURGBP 09/12/2002 11:C	-0.10	-0.13	-0.04	-0.04	-0.09	-0.09	-0.02	0.03	0.04	0.03	0.06
US.IGBPCAD 09/19/2002 12:C	-0.08	-0.15	-0.05	-0.05	0.08	0.07	0.11	0.06	-0.01	0.00	-0.01
US.IGBPUSD 09/23/2002 11:C	0.22	0.34	0.27	0.24	0.24	0.30	0.35	0.39	0.34	0.32	0.27
US.IEURGBP 09/24/2002 09:C	-0.05	-0.23	-0.15	-0.10	-0.05	-0.09	-0.07	0.09	0.07	0.07	-0.02
US.IGBPUSD 09/26/2002 07:C	0.02	0.04	-0.07	0.08	-0.08	-0.18	-0.03	0.02	-0.02	-0.08	-0.11
US.IGBPAUD 10/03/2002 09:C	0.29	0.25	0.14	0.17	0.28	0.22	0.24	0.27	0.22	0.25	0.26
US.IGBPUSD 10/10/2002 11:C	-0.01	-0.08	-0.11	-0.22	-0.13	-0.12	-0.12	-0.16	-0.11	-0.12	-0.12
US.IGBPCAD 10/30/2002 08:C	0.07	-0.02	0.08	0.00	0.10	-0.05	0.02	0.02	-0.09	-0.03	0.28
US.IGBPCAD 11/01/2002 09:C	-0.20	-0.32	-0.28	-0.35	-0.24	-0.30	-0.23	-0.33	-0.32	-0.34	-0.38
US.IGBPCAD 11/06/2002 13:C	0.03	-0.05	-0.12	-0.08	0.00	-0.06	-0.14	-0.13	-0.11	-0.12	-0.09

Figure 9
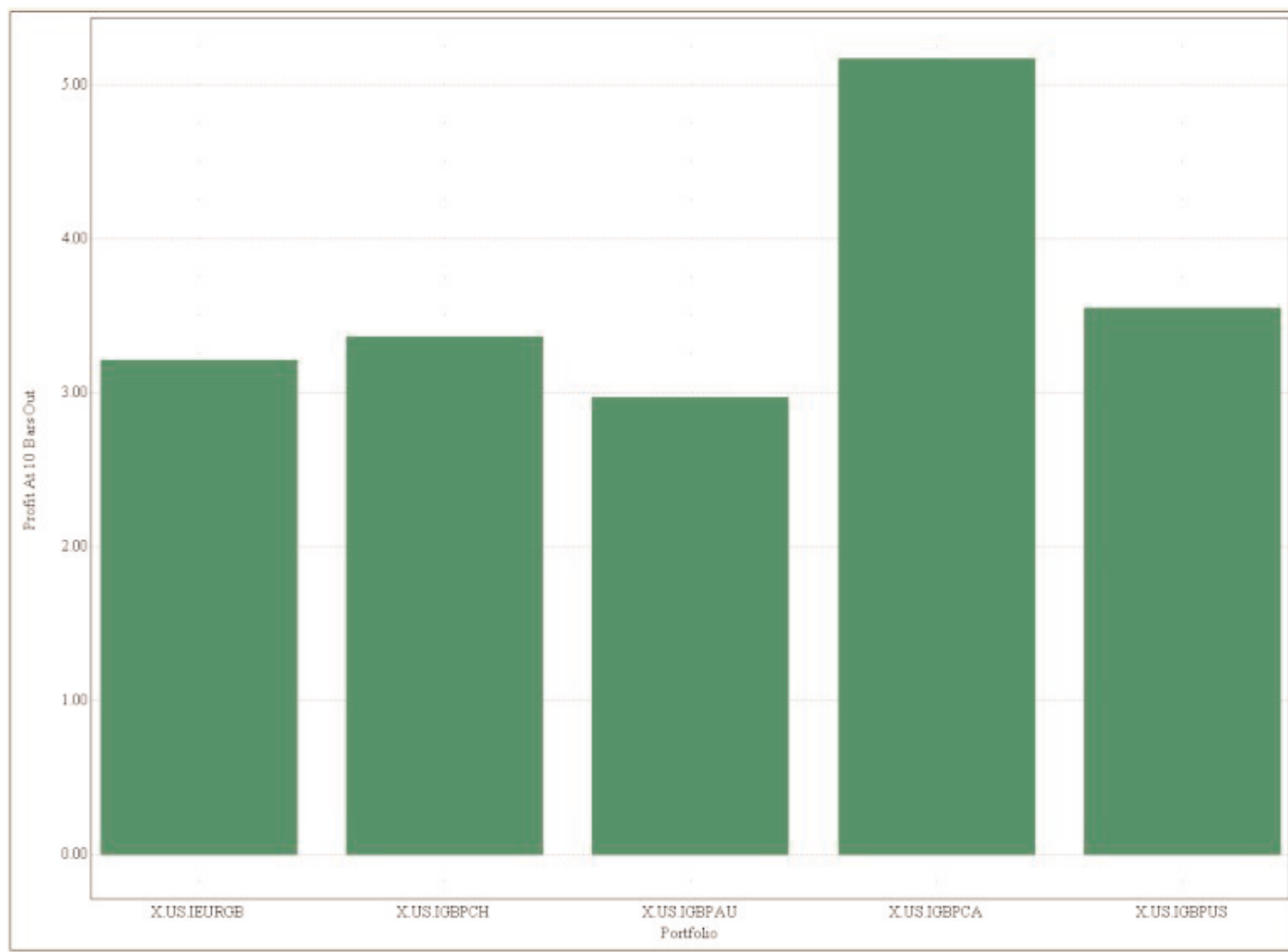
Figure 10

Closing the loop

Figure 11 takes things a step further by providing an indication of congestion count potential as a tool for trading intraday Sterling breakouts. The long and short entry signals shown in Figure 9 have been used as the basis for a simple trading system and applied to GBPAUD. (The weakest market in the entry signal evaluation performed above.) Only two exit signals have been used – a fixed percentage stop loss and a fixed percentage profit target, with neither of the exit percentages being optimised. The results are based on a lot size of £1m per trade, so the AUD185300 profit equates to an annual return (before slippage and execution costs) of approximately 7.6% at current exchange rates. Other trade statistics are also encouraging, such as a remove to neutral[3] of 19.23% and 61.54% winning trades. Although the total trade count of 26 is low, the system also proved profitable in the preceding years back to the introduction of the euro (albeit only marginally in 2001–2002) and has been particularly strong since the end of the test period shown below. ▶
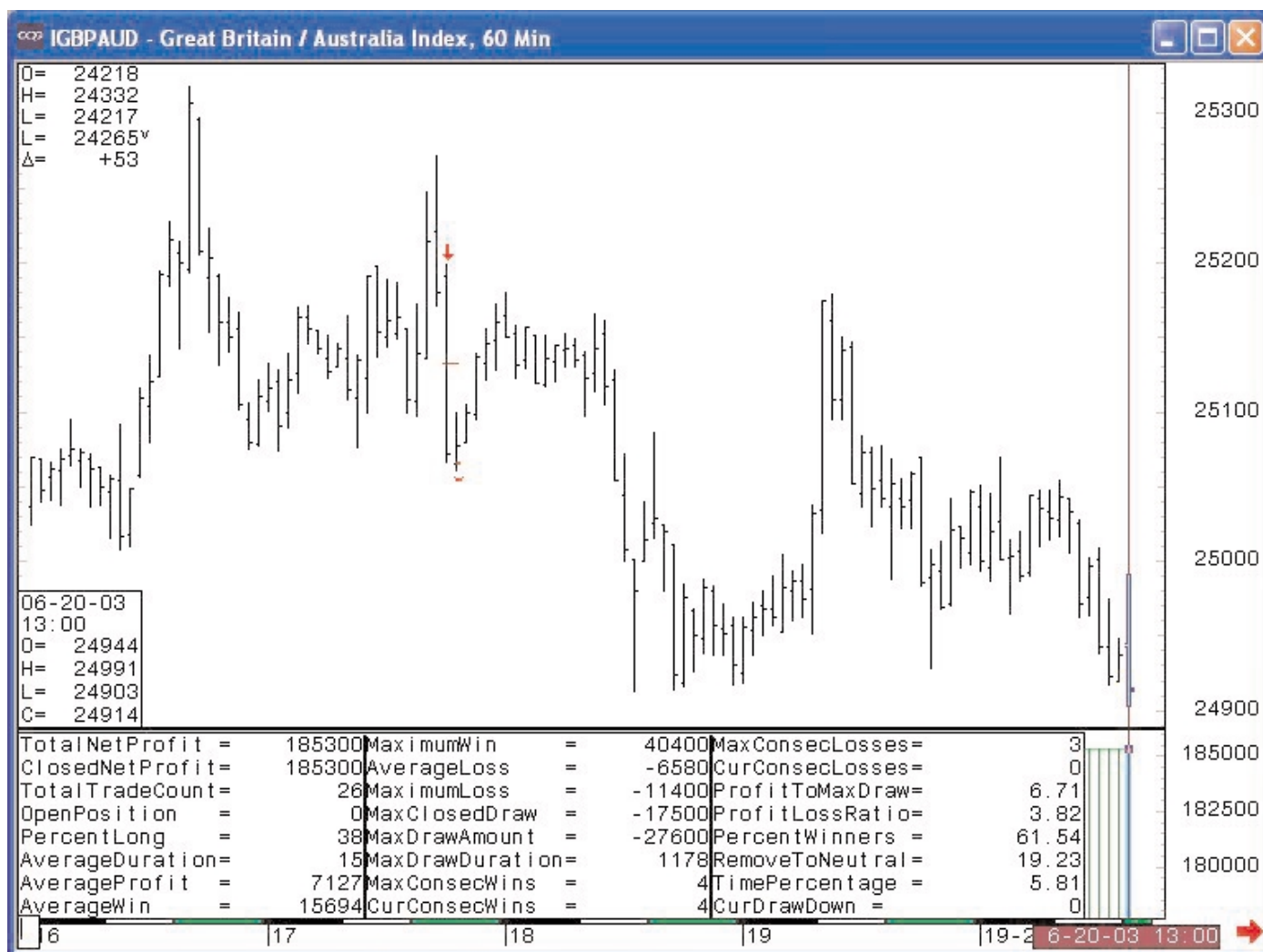

Figure 11

Practical reality

While measuring the length and range of congestion periods may prove a useful method for coping with Sterling's intraday vagaries, its success is obviously dependent upon whether there is a tight/stable enough bid/offer spread to actually execute trades close to the level indicated by the entry signals. The most vulnerable moments in this respect are during the transition periods between one time zone's trading session and the next. (Eleven of the 115 raw trading signals shown in Figure 9 occurred during these periods.) Fortunately the situation here is improving rapidly, with EBS' 'focus hours' already having a favourable impact – in the case of EURGBP pushing the bid/offer spread down to 2-3 pips between 07.00 and 09.00 London time. Under those circumstances, a congestion breakout strategy with a modest percentage profit target becomes viable. ■

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Andy Webb is a freelance writer with 20+ years' experience, most recently specialising in derivatives, technology and trading methodologies. He has written regularly for a wide range of journals – including The Sunday Times, Sunday Business, Treasury & Risk Management, Global Finance, Derivatives Strategy and Wall Street & Technology. He is also actively involved in developing and programming FX trading models for several hedge funds and proprietary trading desks.

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The views expressed in this paper are those of the author and not necessarily those of EBS.

Footnotes

[1] Average true range is the moving average of true range, which is the greatest of:

- High for the price bar minus the low for the price bar
- High for the price bar less the close for the previous price bar
- Close for the previous price bar and the low for the current price bar

[2] So for example, the first individual trade signal listed (on GBPUSD) that occurred on 17 June 2002 shows a loss of 0.16% by the close of the third bar after entry. In this case the entry price was 1.4783 (not shown) so the trade would have been underwater by approximately 24 pips by the close of the third bar. (By contrast, the third individual entry listed – GBPCAD, dated 18 June 2002 – was showing a gain of 0.64% by the close of the sixth bar on an entry price of 2.2908 = +147 pips.)

[3] Percentage remove to neutral is the percentage of winning trades that would have to be excluded from a trade system's results to reduce its total net profit to zero. A percentage remove to neutral of greater than 10 suggests that a trading system is reasonably robust.